DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-018786
Date Inspected: 30-Nov-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes ☐ No ☐ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☐ Yes ☑ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:
CWI Inspector: Mr. Bao Qian

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 13

This QA Inspector observed ZPMC welder Mr. Hu Feng Jian, stencil 067877 used flux cored welding procedure WPS-345-FCAW-3G(3F)-ESAB-Repair to make repairs to OBG segment 13AE grillage weld SA7038-066. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-17841 that documents the repair of this weld. Mr. Bao Qian informed this QA Inspector that the depth of the weld repair gouge prior to welding was 38mm. This QA Inspector measured a welding current of approximately 205 amps and 22.0 volts. This QA Inspector observed that the minimum welding voltage in the WPS is 23.9 volts and that Mr. Hu Feng Jian has a welding voltage that was approximately 2.0 volts below this minimum limit. This QA Inspector showed ABF CWI Mr. Bao Qian the welding voltage meter and he agreed the welding voltage was below the minimum and he adjusted the welding voltage to approximately 27 volts. This QA Inspector observed Mr. Hu Feng Jian appeared to be certified to make this weld, the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding voltage, items observed on this date appeared to generally comply with applicable contract documents. See the photograph

below for additional information.

OBG Bay 14

This QA Inspector observed a ZPMC person performing SMAW tack welding of side plate SP3060F to floor beam FB3121A weld SEG3007AD-037 in the 4F (overhead) position. When this QA Inspector arrived in bay 14 the welder immediately departed the area. This QA Inspector informed ABF CWI Mr. Bao Qian that an unidentified welder had been performing 4F position tack welding and that he had departed as soon as this QA Inspector came near to where this welding was taking place. ABF CWI Mr. Bao Qian informed this QA Inspector that welder was Mr. Liu Yong Sheng, stencil 055483 and that this welder is only certified to make 2F position welds and he is not certified to make 4F position welds. ABF CWI Mr. Bao Qian informed this QA Inspector that he will write a turnover document to inform dayshift supervision that 4F welding had been performed by a welder that was not certified to make this position weld.

This QA Inspector observed ZPMC welder Ms. Wang Min, stencil 044771 used submerged arc welding procedure specification WPS-B-T-2221-B-L2C-S-2 to make OBG segment 14E weld SEG3019*-006. This weld joins deck plate DP3167A to deck plate DP3761A. This QA Inspector measured a welding current of approximately 550 amps, 32.0 volts and Ms. Wang Min appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Chuanzong, stencil 044824 used flux cored welding procedure WPS-345-FCAW-2G(2F)-ESAB-Repair to make repairs to weld SEG3019AP-096. This weld had been ultrasonically rejected and was being repaired per weld repair document B-CWR-2091. ZPMC had documented that the depth of the weld repair was approximately 12mm deep. This QA Inspector observed a welding current of approximately 315 amps and 29.0 volts. This QA Inspector observed that the maximum welding voltage in the WPS is 26.6 volts and that Mr. Chen Chuanzong has a welding voltage that was approximately 2.5 volts above the maximum limit. ABF CWI Mr. Bao Qian used his welding voltage meter and he agreed the welding voltage was above the maximum limit and he adjusted the welding voltage to approximately 26 volts. This QA Inspector observed Mr. Chen Chuanzong appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding voltage, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Quanlin stencil 066746 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007G-049. This QA Inspector observed a welding current of approximately 270 amps, 25.5 volts and Mr. Wang Quanlin appeared to be certified to make this weld. ZPMC had electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Xiang Rong, stencil 066763 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007J-048. This QA Inspector observed a welding current of approximately 270 amps, 27.0 volts and Mr. Zhang Xiang Rong appeared to be certified to make this weld. ZPMC had electric heaters to preheat and maintain the base material temperature

of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Dan Deyin, stencil 044795 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007J-036. This QA Inspector observed a welding current of approximately 270 amps, 27.0 volts and Mr. Dan Deyin appeared to be certified to make this weld. ZPMC had electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 050242 used flux cored welding procedure WPS-345-FCAW-3G(3F)-ESAB-Repair to make weld repairs of ultrasonic rejections to OBG segment 13AE weld SEG3007K-037. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-17547 that documents the repair of this weld. This QA Inspector observed ZPMC QC has recorded a welding current of approximately 220 amps and 23.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yang Yunfeng, stencil 215553 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)-FCM-Repair-1 to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007L-013. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-17548 that documents the repair of this weld. This QA Inspector observed ZPMC QC has recorded a welding current of 154 amps. This QA Inspector observed Mr. Yang Yunfeng appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 066695 used flux cored welding procedure specification WPS-B-T-2133-ESAB to make OBG segment 14E Anchor Plate weld AP3031-862. This QA Inspector observed a welding current of approximately 260 amps, 25.0 volts and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 066041 used flux cored welding procedure specification WPS-B-T-2133-ESAB to make OBG segment 14E Anchor Plate weld AP3031-908. This QA Inspector observed a welding current of approximately 250 amps, 26.0 volts and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Quin Quan, stencil 044774 used flux cored welding procedure WPS-B-T-2231-ESAB to make OBG segment 13AE weld SEG3007AC-007. This QA Inspector observed a welding current of approximately 320 amps and 26.5 volts. This QA Inspector observed that Mr. Zhang Quin Quan appeared to be certified to make these welds and the base materials had been preheated with electric heaters. Items observed on this date appeared to generally comply with applicable contract documents.

WELDING INSPECTION REPORT

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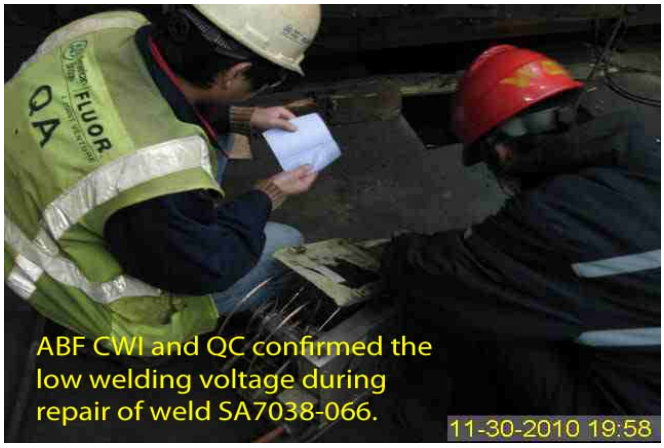

Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact James Devey +8615000026784, who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer